

Vorderbruegge Jeansidentification Validation References

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First acknowledgement re: no validation. (p. 3)

are irregular, as in a barcode. This irregularity is what makes the barcode pattern useful as an identifying characteristic. Although a validation study has yet to be performed to test the theory that all denim trouser barcode seam patterns are unique, it has been observed in numerous examinations that it is possible to distinguish pairs of jeans from one another based solely on differences in the patterns along the seams.

Second acknowledgement. (p. 4)

over features are independent of the manufacturer and wearer. However, a thorough validation study to test this proposal has yet to be performed. Nevertheless, as with differences in the barcode patterns, the cross-overs create observable wear patterns that persist over time, making it possible to use differences in the location and nature of cross-over features to distinguish one pair of denim trousers from another. Thus, one can use cross-overs as an identi-

Fourth acknowledgement. (p. 8)

trousers, and do not originate from any source other than through the manufacturing process and damage-free daily wear. Until a validation study can be conducted to establish the frequency of occurrence and the probable location of stray wear marks such as the cross-over, "H", or "V," it will not be possible to quantify the significance of individual occurrences of such marks when making comparisons. Such a study is planned, but has yet to be begun.

Third acknowledgement. (p. 8)

While a rigorous validation study would be necessary to confirm it, this demonstration did serve to strengthen the proposition that the individual wear marks observed on the known blue jeans are the result of random processes and can be considered unique, individualizing characteristics. Furthermore, when taken together, the presence of such a large number of significant characteristics in a known pair of blue jeans precludes the possibility (or probability) of their having occurred by mere coincidence, and they can thus serve as a set of points of identification.

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Furthermore, such wear marks can be expected to change over time. As a crease or wrinkle is abraded over time the width of the exposed white un-dyed core increases. If two ridges adjacent to one another are subjected to enough abrasion, it is possible that these bright features would eventually merge into a single feature. A failure to consider this possibility might lead to an erroneous conclusion. A second study is being planned in which the evolution of denim trouser wear patterns will be documented photographically over time.

Fifth acknowledgement. (p. 8)

Despite the lack of such validation studies, it should be remembered that in this and other cases the overall significance of wear marks is not necessarily based on a quantitative assessment, but on a qualitative assessment. A single characteristic such as a stain or unusual tear may be sufficient if there is enough image detail pre-

Sixth acknowledgement. (p. 9)

where. A determination of whether individual characteristics like the ones discussed herein are unique or not will remain unanswered until validation studies can be conducted. Until that time, the ability to individualize an item based on a single such characteristic will remain a matter of opinion. However, if it should turn out that such characteristics can be duplicated, it is much less likely that combinations of multiple characteristics can be duplicated. The

limiting constraint on this type of case will be severely restricted. This is due to the much lower resolution provided by video systems which are typically one-tenth that of film systems (3). Unless the identifying characteristics under consideration are sufficiently large, video systems cannot be relied upon to record them with sufficient detail to permit their use in a comparison. Hopefully, higher resolution systems such as High-Definition Television (HDTV) and high resolution digital still cameras will